Meeting Summary: Power Management Controls Project
PAC Meeting — April 10, 2002

Present at the PAC meeting were representatives of LBNL (Alan Meier, Bruce Nordman), the California Energy Commission (Don Aumann), and Compaq, Dell, HP, IBM, Intel, Ricoh, Sony, Sun. and ITIC.

Accessibility

We first reviewed the status of accessibility issues. Our hope had been to locate accessibility professionals who would take an interest in the project and make specific suggestions on a variety of ways to make power controls more accessible and consistent. Unfortunately, despite contacting many individuals and organizations, and reviewing the scope of others via their web sites, no one has stepped into this role. We have a few more leads to follow up on, but don't see effort beyond that as fruitful.

A clear success story is concern for the color-blind, or rather, the *color-deficient*. We have heard from individuals who say that many current green/amber indicators are difficult to discern. An area in which this is critical is traffic signal lights, and so over the years, a number of studies have been done to recommend color ranges that are widely discernable. In 1994, the CIE (the International Commission on Illumination) produced a study with recommendations, and just this year study was finished for the U.S. federal government. Traffic signal lights face a more daunting set of complications than electronics do, with distance, fog, sunlight, darkness, and other factors making recognition more difficult. Thus, adopting these wavelength recommendations should be the best we can do to assure discernability.

Keyboards now commonly have raised dots on the "F" and "J" keys and on the "5" key. These can be vital for the visually impaired, and are helpful for most users. We had been reluctant to suggest a different tactile indication for power buttons, but PAC members suggested that the same dot geometry as used in F, J, and 5 could be replicated on power buttons.

Several PAC members noted the Section 508 requirements. One aspect of accessibility is that for IT equipment users are expected to be trained on their use, so that finding a power button may be simpler than most other keys as it is usually on an edge or corner of the control panel or remote. Conventions for rocker switches as to which direction (up/down, front/back, left/right) is on or off can help. We have observed clear trends in this in products, and will recommend the dominant ones, but have not found any existing standards that address this issue.

Moon/Hilal; List of Manuals for Products

These were quickly reviewed. No PAC action was needed or taken, though if any of you think that more work on the moon symbol is needed, please let us know.

Tentative Recommendations

Several of the recommendations are not controversial. For indicator lights, green/amber/off is the clear leader, but we propose testing to compare it to green/flashing-green/off (the major alternative). The other recommendation that raised concern was that hibernate be identified as a form of off. One PAC member noted many years of trying to teach people that hibernate is a special sleep mode, but others observed that for our key criteria it is clearly a form of off. A member wondered whether there was any TCO or UL issue with this; we will be meeting with TCO representatives later in April, and a UL representative recently told us that UL is not concerned with these issues..

After discussion, the PAC approved the six recommendations as the first part of the standard.

Testing

Testing for this project involves deciding *what* to test, and *how* to test it. The “how” will likely vary with the topic. We recommended to the PAC that the indicator light part of the standard be tested, as well as the term for hibernate, though the latter we see as best done in the context of device behavior once those recommendations are produced. The PAC concurred with this. After the meeting, a member related that it is important to provide very specific guidelines as to how to implement the standards, with examples of how they apply to different types of products and controls.

There was also discussion about the degree to which average people care to distinguish between hard-off and soft-off switches, and whether it would be useful to have symbols that specify one or the other. At present, our interface standard does not address this, largely as we assume that most people, for most purposes are not interested in the difference, or if they do want a hard off on occasion, will simply unplug the device to be sure. Software controls might not know if the device being controlled will go to a hard-off mode. A possible interpretation of the existing international symbols (one of the definitions is quite unclear) could distinguish between soft-off ⏻ and hard-off ⏼ though many existing devices do not follow this interpretation. Most rocker switches are hard-off switches. We agreed to do some testing about the degree to which people are interested in distinguishing a soft-off from a mains disconnect, and the degree to which the existing symbols communicate that to them. Additional hard-off switches are more common elsewhere in the world, such as on TVs in Europe.

As for what type of testing to do, this needs to be determined on a case by case basis. PAC members related that in general, they do the full range of testing in terms of strategy (focus group, surveys, direct observation, etc.) and in the number and type of subjects used. We did not get clear feedback on what was necessary for our two tests, but that will be addressed on the next call about testing. Some PAC members related in their testing, power issues raised little interest among consumers.

In a few weeks, LBNL will send out a more detailed proposal as to what to do to test these two topics. There will be more testing about device behavior once we have recommendations about that.

Future PAC meetings

There was a consensus that telephone meetings are sufficient for the foreseeable future. If the PAC feels that an in-person meeting is needed, we will call one, but otherwise will keep to telephone meetings to make the best use of PAC member time. This meeting was hindered by some of the background materials not being available until shortly before the meeting. Future meetings will be scheduled to assure this does not happen again.

Device Behavior Introduction

This item was introduced. Many PAC concerns about how potentially problematic design issues fall into this area. We expect that notebook computers will be a focus of this as it is the most complex case people commonly encounter for device behavior and hold the most down-side risk (e.g. lost data). However, we also need to make sure that our recommendations work for other devices and anticipate new interface needs. It is likely that developing recommendations on this will be more incremental and interactive with the PAC than the first set was. PAC members had identified battery indicators as something to assess; this can be done while looking at device behavior.

Outreach / Other PAC Priorities/Comments / Standards / Process

We ran out of time and so didn't get to these agenda items.

Requests to the PAC

- Forward to us any usability studies that you think are good models for the type and scale of testing needed for the indicator light colors and symbol meaning. Alternatively, provide more feedback on the scale/format question to help guide our plans.
- Send in model numbers of any devices that you would like us to make sure to assess for device behavior.
- Continue to distribute project documents within your organization as appropriate. We would particularly value any comments from offices in dominantly Islamic countries about the crescent moon symbol as meaning sleep.

The next PAC teleconference is expected in June and will be focused on testing. Thank you.